

1 9 9 0 W I N T E R

ROLAND·NEW PRODUCT·NEWS



 Roland

Contents

ROLAND

D-70.....	2
Super LA Synthesizer	
R-8M.....	5
Total Percussion Sound Module	
M-12E.....	7
12 Channel Mixer	

BOSS

GE-231	9
2-Channel 31-Band Graphic Equalizer	
GE-215.....	9
2-Channel 15-Band Graphic Equalizer	
RV-1000	11
Digital Reverb	
RE-1000	12
Digital Multi-Echo	
OS-2	13
Overdrive/Distortion	
EH-2	13
Enhancer	
PN-2	14
Swing Pan	
LM-2B	14
Bass Limiter	

D-70

Super LA Synthesizer



The D-70 Super LA Synthesizer is a powerful 76-key, multi-timbral keyboard featuring unique sound creation capabilities, innovative performance features, and incredible new sounds. The D-70 introduces a new approach to the "Linear Arithmetic" concept, enabling you to develop complex, exceptional sounds and providing a new level of creative flexibility which makes it the perfect instrument for live performers or for studio musicians who need instant, complete control over sounds.

With its extensive multi-band filtering capabilities, the new DLM (Differential Loop Modulation) process which creates thousands of new distinctive, modulated waveforms, and a wide selection of new PCM samples, the D-70 provides you with extraordinary power. The revolutionary Tone Palette editing system makes it easy to create new sounds instantly by allowing you to modify main synthesizer parameters such as level, attack, release, resonance, cutoff, and panning. By pressing a single button on the D-70's front panel, you can use the Tone Palette's four sliders to control parameters for any four Tones at once.

No other synthesizer offers you such power and flexibility. The D-70 also contains a wide variety of impressive performance functions. Offering a large 40-digit x 8-line LCD which makes operation and editing easy and full MIDI control capabilities, the D-70 is the ideal master keyboard for any MIDI system. The keyboard lets you control release velocity in real time, in addition to velocity and channel aftertouch, and responds to polyphonic aftertouch through MIDI, giving you incredible expressive responsiveness. The Tone Palette can be operated in real time as well, providing even greater expressive possibilities.

The D-70 contains PCM wave data, such as white noise, spectrums, and sawtooth waves, that can be used as sound elements. A variety of high-quality, multi-sampled PCM sounds including pianos, brass, guitars, drums and distinctive synthesizer textures are provided internally as well. In addition, a new sound card developed exclusively for the D-70 features a large selection of PCM wave sound elements. The D-70 is also compatible with SN-U110 Series Sound Cards which provide access to a variety of exceptional multi-sampled instrument sounds that may be used as is, or edited as desired. Waveforms from external cards as well as from internal PCM sounds can be modified extensively, giving you incredible power for creating sounds. DLM (Differential Loop Modulation),

a unique, new editing feature can be used to truncate a waveform and process it with loop modulation. This allows you to create a wide assortment of totally new waveforms from the original PCM wave. These waveforms can then be filtered with a high-quality multi-band TVF filter. The D-70 enables you to control and modify sounds at every level, giving you the ability to create unique, sophisticated, and personalized sounds never available before.

Enhanced Sound Sources

Superb Selection of Built-In PCM Sounds

The D-70 includes a variety of sound elements such as white noise, sawtooth wave, and PCM short loop sounds, similar to those of the other D-Series synthesizers. In addition to these versatile sound elements, the D-70 contains a wide selection of multi-sampled PCM sounds ranging from lifelike acoustic instruments to analog and digital synth textures that offer sound quality comparable to professional samplers. The D-70 also allows you to modify these PCM sounds using DLM and TVF filtering for an even greater range of tonal possibilities.

Dedicated PCM Sound Elements Card and SN-U110 Series Sound Card Library.

In addition to the D-70's internal sound elements, a completely new Sound Card designed exclusively for the unit featuring PCM sound elements such as white noise and sawtooth waves can be inserted in the D-70's two ROM card slots for additional creative possibilities. The D-70 is also compatible with SN-U110 Series sound cards, a diverse collection of multi-sampled PCM sounds. PCM wave sound elements from the dedicated cards and sounds from SN-U110 Series cards can also be TVF-filtered on the D-70 allowing you to create an even wider variety of sounds.

DLM (Differential Loop Modulation) Enhances Sound Creation

DLM is a revolutionary feature that allows you to truncate PCM waveforms, define the start point and loop length, then process the waveforms with loop modulation, resulting in wave data with a new harmonic structure. The mode, start point, and loop length of the waveform can be set to create integral or non-integral harmonics, producing sounds that span the entire

frequency range. The D-70's built-in PCM waveforms provide the raw materials suitable for effective filtering and DLM radically alters the harmonics of these waveforms prior to the TVF filtering stage. By using a single PCM wave to create a variety of different waveforms, DLM produces random, modulated sounds completely different from the original similar to a ring modulation effect. With these high level editing possibilities, you can build sounds from the ground up and customize PCM waveforms with unprecedented control.

Newly Developed High-Performance TVF Increases Sound Possibilities

Because of the complex harmonic structure of the D-70's PCM sound elements, filtering allows you to alter sounds with dramatic results. The TVF has three selectable modes and resonance, including low-pass, band-pass and hi-pass filters for filtering the PCM sound sources. A wide array of synthesized sounds can be created by filtering the built-in sound elements, preset PCM instrument sounds, sound card PCM wave data, and sound elements created with DLM. This gives you filtering capabilities far surpassing those of analog synthesizers. The TVF enables a variety of sound editing techniques, such as varying the tone color according to velocity and aftertouch, changing the composites of sound during looping and releasing, and arranging smooth transitions between pianissimo and fortissimo sounds. Additional, expressive sounds can be developed based on the particular qualities of each PCM sound source.

Tone Palette Gives You Powerful Sound Editing Capabilities

The D-70's sound editing system incorporates the new Tone Palette concept consisting of four Sections: Lower 1, Lower 2, Upper 3 and Upper 4. A separate Tone can be assigned to each of these Sections and provided with individual Zone settings on the keyboard, along with other parameters. A Patch is created by configuring all parameters for each Section in the Tone Palette as well as additional parameters. Because of the versatility and high quality of the D-70's Tones, each Tone is essentially a separate synthesizer. Using Key mode, sounds can be split, layered, or zoned, providing a variety of velocity mix configurations.

Four multi-functional sliders on the front panel enable easy adjustment of Tone Palette parameters including Level, Pan, Key Shift, TVF Cut Off Frequency, TVF Resonance, Attack Time and Release Time. Using the Section Select button, a single Tone can be selected, and each slider can modify a different parameter. Or, one parameter can be assigned to all four sliders simultaneously to modify the same parameter for all four Tones. This allows you to create four-tone layered sounds while in Layer mode, similar to the 4-Partial dual sound on other D-Series synthesizers. But since the D-70 uses Tones instead of Partials, sounds can have more texture and color. For a creative variation of the Layer function, sound elements with a variety of envelopes can be combined to produce various tonal changes. For instance, an attack element used

as the attack portion can be assigned to one Section of the Tone Palette, a sustaining element assigned to another, and decay and release elements assigned to the other Sections. The balance between each of these elements can then be adjusted with the four sliders, for creative real-time control of envelope components.

Tone Palette Organization Table

Patch	
Key Mode	Tone Palette
Layer	Lower 1 Upper 3
Split	TONE TONE
Zone	Lower 2 Upper 4
	TONE TONE

Analog Feel Function Adds Warmth

The Analog Feel function emulates the fluctuating pitch of an oscillator on an analog synthesizer, helping you create rich, full string sounds, for example, and adding natural spaciousness to the realistic PCM sounds.

Outstanding Performance Capability 76-Note Keyboard Configuration

The D-70 features a 76-key velocity and after-touch sensitive keyboard with a weighted synthesizer action. This configuration provides dynamic performance over a wide tonal range for playing sounds of instruments (such as the piano) that require a full multi-octave range. Even while using split mode, each split of the keyboard is wide enough to accommodate the natural range of many timbres. With full MIDI capability to handle external MIDI devices, the D-70 can also be used as a master keyboard in a MIDI system for live performance or studio applications.

Solo Mode and Portamento

The Key Assign of the D-70 also includes Solo mode and Poly mode. The Solo mode offers a selection between Normal and Legato. When Legato is selected, the envelope of notes played in legato will not re-trigger, similar to a monophonic analog synthesizer. This makes it easy to simulate the legato style of brass instruments or slide guitar.

Also in the Solo mode, portamento may be switched on or off and offers a selection between Normal and Auto. In the Auto portamento mode, a portamento effect is automatically added to sounds played in Legato.

Release Velocity

An additional new D-70 development allows release to be controlled in real time by key velocity, providing very expressive capabilities. Using Release Velocity, the release time is extended when the player releases the key slowly.

D-70 Multi-Sound Workstation

User Sets Contribute to Operational Ease

A total of 64 configurations of Patch combinations, effect settings, pan, and MIDI receive channel settings can be stored as a "Performance" setup. Any five Performance setups can be grouped using the function keys located below the LCD, making it easy to instantly recall frequently used Performance setups. These groups, called "User Sets" can be stored in the D-70's internal memory or on external RAM cards. Both the internal memory and RAM cards are capable of storing 10 User Sets containing five Performance setups each, for a total of 50 Performance setups.

Large 40-Digit x 8-Line LCD Display

The large LCD offers quick confirmation of all eight sounds in each bank by pressing individual Bank buttons. Nearly 60 different screens are available and can be accessed quickly using Function buttons displayed in each menu similar to those on the W-30 workstation, to make editing operations easy to perform even without referring to the operation manual.

High-Quality Sounds Further Enhanced by Built-In Digital Reverb and Chorus Effect

Built-in digital reverb and chorus add depth and texture to sounds and feature 24-bit processing that provides ultra-clean sound quality. Since Reverb and Chorus are linked digitally, both effects can be combined without adding noise or reducing sound quality. Effect on/off status can be memorized for each Part. Effected signals are routed to the MIX L/R outputs or you can route dry sounds to the direct L/R outputs for external processing.

Six-Part Multi-Timbral Capability

A total of six Parts including a separate Rhythm Part can be performed simultaneously. When connected with an external MIDI sequencer, sound data can be conveniently programmed with the D-70's 76-note keyboard.

Specifications

- **Keyboard:** 76-key weighted velocity and aftertouch-sensitive
- **Sound Sources:** Advanced LA Synthesis, provided with Multi Mode TVF (low-pass, band-pass and high-pass filters)
- **Maximum Polyphony:** 30 voices
- **Internal Memory:** • System Setup: 1 • User Sets: 10 • Performances: 64 • Patches: 128 • Tones: 128 • Rhythm Setup: 1
- **External Memory:** • User Sets: 10 • Performances: 64 • Patches: 128 • Tones: 128 • Rhythm Setup: 1
- **Digital Effects:** • Reverb: Room 1/2/3, Hall 1/2, Gate, Delay, Cross Delay • Chorus: Chorus 1/2, FB-Chorus, Flanger, Short Delay • Pan: L to R in 15 increments
- **Display:** 40-digit x 8-line LCD
- **Rear Panel Jacks:** Mix Out L(Mono)/R, Direct Out L/R, Exp Pedal, Pedal Switch, Hold Pedal, Phones, MIDI In/Out/Thru
- **Dimensions:** 1097(W) x 305(D) x 100(H)mm (43 1/8" x 12" x 3 7/8")
- **Weight:** 12kg (26 lb 5 oz)

*Specifications and appearance subject to change without notice.



R-8M

Total Percussion Sound Module



The R-8M Total Percussion Sound Module is a compact, 1U rack-mount version of the R-8 Human Rhythm Composer which provides real-time control of the revolutionary Feel and Nuance functions from external MIDI pad controllers or sequencers. With an impressive selection of high-quality sounds, the ability to layer sounds, and three ROM card slots, the R-8M offers creative capabilities and the convenience of a rack-mount design. The R-8M also stores 32 patches, making it easy to access various drum configurations instantly and perform or record natural-sounding, "humanized" rhythms.

- The R-8M's 44.1kHz sampling rate and 16-bit dynamic range provides impressive sound quality and facilitates extensive sound editing possibilities. Because of the high-quality sound generation technology applied to sample data, radical tonal changes can be achieved. For instance, pitch can be varied over a ± 4 octave range with no significant loss in sound quality. This offers the user maximum flexibility for the creation of new, original sounds.
- 68 internal sounds are provided, as well as three card slots for accessing sounds from the growing R-Series Sound Card library, a diverse collection of specialized drum sounds and percussive effects. When an R-Series sound card is inserted in each slot, you can access a total of 146 sounds at a time, providing an amazing range of tonal and rhythmic possibilities.
- All sounds on the R-8M are designed exclusively for drum and percussion applications, and multiple waveform sample data is included that produces a wide range of graduated sound variations from a single instrument. This enables subtle nuances of expression which characterize the performance of a drummer or percussionist to be reproduced with lifelike accuracy. For instance, changes in velocity from an external controller can affect not only volume, but brightness and texture as well. The Nuance function makes use of multiple waveforms to simulate the subtle nuances of a live drummer's playing technique, such as varying between the bell and edge of a ride cymbal.
- The R-8M's built-in sounds as well as sounds from external ROM cards can be edited to your preference by adjusting various Sound Parameters. This allows you to create your own original, customized sounds. A variety of Sound Parameters can be modified for each sound including Pitch, Decay time, Nuance, and Level, and Output Assign allows you to assign a sound to either a stereo mix output with multiple pan positions or to one of six multi outputs. Different Assign Types allow you to assign each sound to either Mono, Poly, or eight other Exclusive modes which determine how instruments respond, adding realism to performances. Another useful Sound Parameter that can be modified is Velocity curve. Eight different Velocity curves are available for each sound, enabling more expressive capabilities using pad controllers.



- The R-8M contains one Instrument Section and four Performance Sections, each of which can be set to receive a separate MIDI channel. This gives the R-8M five-part multi-timbral capability and allows it to function as five independent sound sources. Each note in the Instrument Section can be assigned an instrument sound along with various Sound Parameters. In Layer mode, two different sounds can be given the same note number and played simultaneously. This allows you to create thick rhythm textures or combine the same sounds with slightly different pitches to create a flanging effect. In addition, parameters such as Pitch, Decay, Pan, and Nuance can be adjusted in real time using MIDI control change messages such as modulation information from an external pad controller or keyboard. This adds realism and real-time expressiveness to performance. The four Performance Sections of the R-8M allow the user to play melodic instruments such as marimba, vibraphone, or bass guitar. A single instrument can be assigned to each Section, and Pitch, Nuance, Decay, and Pan can be controlled according to note number from an external MIDI instrument using the Key Follow parameter which has a variety of creative applications. For example, by setting the variable pitch of the Marimba instrument to 100 cent, Key Follow enables you to play the instrument chromatically from a keyboard with full polyphony and using expressive controllers such as pitch bend.
- All parameters of these five Sections can be configured to a Patch. Up to 32 Patches can be stored to internal memory, and an additional 32 Patches can be stored to an optional RAM card (M-256E). Patches can be selected via MIDI program change commands, for convenient access during recording or live performance. This enables you to instantly change complete drum sets such as from jazz to hard rock without having to alter MIDI transmit note numbers.

- Through MIDI, the R-8M's Feel function can be controlled by external devices. Feel adds a "human" element to rhythm programming, producing a realistic, natural sound by creating subtle variations in nuance and accent that characterize a human performance. Feel can be set to three different modes: Groove, Velocity or Random. Groove adds variations according to set values and MIDI clock, such as on the 2nd and 4th beat of each measure. Velocity mode is an exclusive R-8M feature that allows Feel parameters to be controlled by velocity information from external controllers such as a keyboard or the PAD 80 Octapad II pad controller. Groove and Velocity are called Regular Feel. Random Feel affects Regular Feel by adding an unpredictable element to the performance, with random variations in nuance and accent that simulate the performance of a live drummer. All Feel parameters can be configured to a Feel Patch. Up to 16 of these Feel Patches can be stored to the internal memory of the R-8M and another 16 Feel Patches can be stored to an optional RAM card. Feel Patches can be selected by Program Change messages from external MIDI devices, for instant access during live performance.
- ROM PLAY features a demo song to demonstrate the R-8M's outstanding sounds and capabilities.
- Three card slots are available for accepting sound cards from the SN-R8 Series Sound Card Library, an extensive selection of specialized, high-quality sounds suitable for a variety of applications.

Specifications

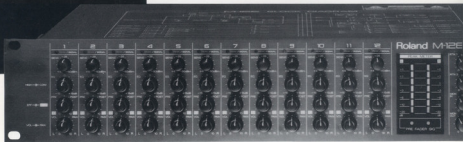
- Wave Data: 44.1kHz Sampling Rate, 16-bit Dynamic Range • Max. Polyphony: 12 voices • No. of Sounds: Internal: 68 • External: 26 (optional ROM Card) x 3 • No. of Patches: Internal: 32 • External: 16 (optional RAM Card) • No. of Feel Settings: Internal: 16 • External: 16 (RAM Card) • Utility Mode: ROM Play, LCD Contrast Adjustment (1 - 15), Bulk Dump (All Patch, Feel, Setup), RAM Card (Format, Load, Save)
- Jacks: MIDI IN/OUT/THRU, Output L (Mono)/R, Multi Output x 6 Phone
- Display: 16-digit x 2-line backlit LCD • Dimensions: 482(W) x 358(D) x 45(H)mm (19" x 14 1/4" x 1 3/4") EIA-1U Rack-mountable • Weight: 4.5kg (9 lb 14 oz) • Options: M-256E RAM card and SN-R8 Series ROM cards

*Specifications and appearance subject to change without notice.



M-12E

12 Channel Mixer



With the increasing popularity of rack-mounted electronic musical instruments, especially multi-timbral sound sources with multi-outs, the demand for affordable, high quality mixers in a compact rack-mount design has never been greater. The M-12E is a compact 2U rack-mountable 12-channel mixer, offering exceptional handling ease and excellent sound quality well suited for professional applications. Each channel handles input signals ranging from mic level at -60dBm to professional line level at $+4\text{dBm}$ and a separate 2-band EQ for each channel is also provided. The M-12E offers numerous versatile features including two different sends and two stereo returns, insert jacks on channels 1—4, Monitor In jack, and stacking capability. Perfect for use in live performance or studio systems, the compact M-12E provides exceptional quality and versatility at an affordable price.

- The M-12E provides the same high quality sound and low noise levels as Roland's highly acclaimed M-Series Mixers as well as the high-performance capabilities of the M-24E and M-16E mixers.
- All 12 channels handle a wide input sensitivity range, from mic level at -60dBm to professional line level at $+4\text{dBm}$. This allows you to use a variety of input sources including multi-timbral sound sources, multi-track tape recorders, electronic instruments, and microphones.
- A Peak/Signal indicator is included for each channel, and the master section features a Peak Level Meter and Pre Master Fader Signal indicator, making it easy to monitor the signal at several different stages.
- All channels are equipped with a 2-band EQ, allowing precise adjustment over the high and low frequency ranges without any degradation in sound quality. The high EQ is 10kHz shelving with a range of $\pm 15\text{dB}$, and the low EQ is 100Hz shelving with a range of $\pm 15\text{dB}$.
- The M-12E is equipped with independent AUX and Effect sends, and two separate stereo Effect Returns. The AUX send controls can be rotated to either Pre or Post fader position. When set to Pre fader, the signal is not affected by channel volume, allowing you to set an independent onstage monitor mix, for example. When set to Post Fader, the signal is affected by channel volume, allowing you to use it as a second effect send. The M-12E also offers insert jacks on channel 1—4, allowing you to use effect units such as limiters, delays, and reverb (with the optional PCS-31 insertion cable) on specific input signals.
- Stereo Monitor In jacks allow you to monitor a sound source (such as a tempo click from a sequencer) through the Monitor output and Headphones output without sending it to the Master output.



- Separate volume controls are provided for the Monitor output and the Master output. This allows the stage monitor level to be set differently than that of the master volume for the main mixing console.
- The Effect/Aux Bus In terminal allows stacking of two or more units. When two M-12E's are stacked, they can operate as a 24-channel mixer which occupies only 4U rack spaces. Balanced XLR Connectors are also provided for the Master output.

Specifications

- Controls: • Channel: Sens, EQ (High/Low), Eff, Aux (Pre/Post), Pan, Vol
- Master: Rtn1, Rtn2, Monitor In, Monitor Out, Effect Send, Aux Send, Master Balance, Master Volume, Phones, Power Switch • Rear: Rtn1 Level Switch (+4dBm/-20dBm) • Indicators: • Channel: Peak/Signal • Master: Peak Level Meter (L,R), Pre Fader Signal (L,R), Power • Inputs/Outputs: • Channels: Channel Input (Phone Unbal): -60dBm to +4dBm; Insert (Ch1-Ch4): 0dBm • Master: Rtn1 (L/Mono, R): +4dBm/-20dBm; Rtn2 (L/Mono, R): +4dBm; Monitor In (L/Mono, R): -20dBm; Bus In (Eff, Aux): +4dBm; Master Out (L, R, XLR balanced): +4dBm; Master Out (L, R, Phone Unbal): +4dBm; Monitor Out (L/Mono, R): +4dBm; Effect Send: +4dBm; Aux Send: +4dBm; Phones: 100mW x 2 • Frequency Response: 10Hz-60kHz, +1/-2dB (SENS at MIN) • Total Harmonic Distortion: 0.03% or less (20Hz-20kHz rated output, SENS at MIN) • Noise Level Equivalent Input: -124dBm (Inputs shorted, IHF-A type) • Crosstalk: -70dBm or less (1kHz interchannel); -60dBm or less (1kHz L and R) • Dimensions: 482(W) x 88(H) x 281(D)mm (19 1/4" x 3 1/2" x 11 1/8") • Weight: 6kg (13.2 lb) • Options: PCS-31 Insertion Cable

*Specifications and appearance subject to change without notice.

Input Standard

Input Jacks	Input Sensitivity	Rated Input Level	Input Impedance	Recommended Source Impedance	Connector
CHANNEL INPUT (SENS-MIX)	CH1-12 (PHONE UNBAL)	-60dBm (0.38mV) ~ +40dBm (0.78mV)	5 kΩ	≥ 140	PHONE
INSERT RETURN	CH1-4	-60dBm (0.38mV)	30kΩ	≥ 740	STEREO PHONE
RETURN	Rtn1 (LEVEL)	-20dBm (0.89mV)	20kΩ (10k MONO)	≥ 140 (STEREO) / ≥ 140 (MONO)	PHONE
	Rtn2	-20dBm (0.89mV)	+4dBm (1.23mV) 10kΩ (MONO)	≥ 140 (STEREO) / ≥ 140 (MONO)	PHONE
MONITOR IN	MON IN	-20dBm (0.89mV) ~ +40dBm (1.23mV)	10kΩ (STEREO) 5kΩ (MONO)	≥ 140	PHONE
BUS IN	EFFECT, AUX	-20dBm (0.89mV) ~ +40dBm (1.23mV)	10kΩ	≥ 140	PHONE

Output Standard

Output Jacks	Rated Output Level	Non-clip. Max. Output Level	Output Impedance	Recommended Load Impedance	Connector
MASTER OUT (BALANCED)	+4dBm ¹ (1.23mV) ~ +20dBm ^{1,2} (7.75mV)	+20dBm ¹ (7.75mV)	600Ω	≥ 600Ω	XLR type (XLR 3-30)
MASTER OUT (UNBALANCED)	+4dBm (1.23mV) ~ +20dBm (7.75mV)	+20dBm (7.75mV)	300Ω	≥ 340	PHONE
MONITOR OUT	+4dBm (1.23mV) ~ +20dBm (7.75mV)	+20dBm (7.75mV)	140 (STEREO) 500Ω (MONO)	≥ 10kΩ	STEREO PHONE
INSERT SEND (CH1-4)	0dBm (775mV) ~ +20dBm (7.75mV)	+20dBm (7.75mV)	300Ω	≥ 740	PHONE
SEND (EFFECT, AUX)	+4dBm (1.23mV) ~ +20dBm (7.75mV)	+20dBm (7.75mV)	300Ω	≥ 340	PHONE
PHONE	—	100mW ~ 100mW ²	100Ω	≥ 80	STEREO PHONE

① 0dBm = 0.775Vrms ② 600Ω loaded ③ 100Ω when both channels loaded



GE-231

2-Channel 31-Band Graphic Equalizer

\$695.00

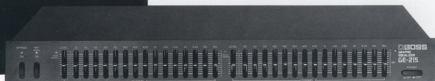


BOSS introduces two affordable 2-channel graphic equalizers, designed to satisfy the increasingly sophisticated needs of today's musicians. The GE-231 is a 2U rack-mountable, 2-channel 31-band graphic equalizer which offers the same flexibility and functions as two BOSS GE-131s. The GE-215 is a compact, 1U rack-mountable graphic equalizer featuring 2 channels and 15 bands. The affordable GE-231 and GE-215 can be used for a wide range of applications including professional sound reinforcement, 2-channel musical instrument equalization, and stereo equalization in a professional or home recording studio.

GE-215

2-Channel 15-Band Graphic Equalizer

\$395.00





- Like the BOSS GE-131, the new GE-231 and GE-215 feature an affordable price and outstanding sound quality. Both units are constructed of carefully selected parts and an exceptional circuit design that achieves excellent sound quality, making both units suitable for use with high-quality digital sound sources.
- Each channel of the GE-231 covers a 1/3 octave range of 20Hz—20kHz over 31 bands, while each channel of the GE-215 covers a 2/3 octave range of 25Hz—16kHz over 15 bands. Both units are equipped with a High Pass Filter which cuts off frequencies lower than 40Hz (−18dB/Oct) to prevent speaker cabinet resonance and excessive booming in the lower range.
- Both models feature a Total Level Control which lets you adjust the overall sound volume after equalization.
- The GE-231 provides a Range button on the front panel, letting you select either a ± 6 dB variable range (most suitable for soundfield tonal adjustment) or a ± 15 dB variable range (to produce radically altered sounds and eliminate feedback) over all bands. The variable range of the GE-215 is fixed at ± 15 dB.
- Each unit features a Bypass function switch which allows the input signal to bypass the internal circuitry when equalization is not required. An optional FS-5L foot switch can be connected to the Bypass Remote jack on the rear panel of the GE-231/215, allowing you to instantly switch between a drastically equalized setting and a flat setting, a particularly handy feature when used with a guitar or keyboard.
- Convenient LED indicators display incoming signals (indicated in green) and overload signals (indicated in red) both before and after equalization, allowing you to obtain optimal signal levels for recording or PA applications.

GE-231 Specifications

- Input Level: $+4$ dBm rated / -10 dBm rated • Input Impedance: 100k Ω
- Output Level: $+4$ dBm rated ($+20$ dBm max.) • -10 dBm rated ($+6$ dBm max.) • Output Impedance: 600 Ω • Output Load Impedance: More than 10k Ω • Frequency Response: 20Hz to 20kHz, 0 $\pm$ 1dB, Level Switch at $+4$ dB • Total Harmonic Distortion: Less than 0.05%; 20Hz to 20kHz, Level Switch at $+4$ dB • Residual Noise: Less than -96 dBm (H-F-A); Level Control/Equalizer Control: Flat, Level Switch at $+4$ dB

Front Panel

- Volume Sliders: • Band: 31 $\times$ 2 (20Hz—20kHz) • Total Level: 2 ($\pm 6/15$ dB)
- Buttons: • Bypass: 2 • High Pass Filter: 2 (40Hz, -18 dB/Octave)
- Range: 2 ($\pm 6/15$ dB) • Power: 1 • LEDs: Bypass, Overload, Range

Rear Panel

- Slide Switch: Level ($-10/+4$ dB) • Phone Jacks: Channel 1 (Input $\times$ 1, Output $\times$ 1); Channel 2 (Input $\times$ 1, Output $\times$ 1) • Remote Jack: 2 (On/Off)
- Dimensions: 480(W) $\times$ 88(H) $\times$ 235(D)mm (19" $\times$ 3 1/2" $\times$ 9 1/4")
- Weight: 3.5kg (7 lb 9 oz)

*Specifications and appearance subject to change without notice.

GE-215 Specifications

- Input Level: $+4$ dBm rated / -10 dBm rated • Input Impedance: 100k Ω
- Output Level: $+4$ dBm rated ($+20$ dBm max.) • -10 dBm rated ($+6$ dBm max.) • Output Impedance: 600 Ω • Output Load Impedance: More than 10k Ω • Frequency Response: 20Hz to 20kHz, 0 $\pm$ 1dB, Level Switch at $+4$ dB • Total Harmonic Distortion: Less than 0.05%; 20Hz to 20kHz, Level Switch at $+4$ dB • Residual Noise: Less than -96 dBm (H-F-A); Level Control/Equalizer Control: Flat, Level Switch at $+4$ dB

Front Panel

- Volume Sliders: • Band: 15 $\times$ 2 (25Hz—16kHz) • Total Level: 2 (± 15 dB)
- Buttons: • Bypass: 1 • High Pass Filter: 1 (40Hz, -18 dB/Octave)
- Power: 1 • LEDs: Bypass $\times$ 2, Overload

Rear Panel

- Slide Switch: Level ($-10/+4$ dB) • Phone Jacks: Channel 1 (Input $\times$ 1, Output $\times$ 1); Channel 2 (Input $\times$ 1, Output $\times$ 1) • Remote Jack: 2 (On/Off)
- Dimensions: 480(W) $\times$ 44(H) $\times$ 225(D)mm (19" $\times$ 1 3/4" $\times$ 8 7/8")
- Weight: 2.5kg (5 lb 8 oz)

*Specifications and appearance subject to change without notice.



RV-1000

Digital Reverb

\$ 295.⁰⁰



The RV-1000 is a 1U rack-mount, stereo digital reverb unit with 16-bit A/D/A conversion and a variety of preset reverb modes for convenient operation. The reverb circuit features a newly developed algorithm that provides sound quality normally found on more advanced units. A variety of other features such as pre-EQ and a gain switch are included, offering exceptional quality and versatility in a compact, affordable package.

- Sixteen preset reverb modes provide instant access to a variety of ambient effects. Presets range from Small Room to Cathedral, as well as gate and plate reverbs for more specialized effects.

Preset Reverb Modes

1. Small Room 1	9. Cathedral
2. Small Room 2	10. Plate 1
3. Mid Room 1	11. Plate 2
4. Mid Room 2	12. Gate 1
5. Mid Hall 1	13. Gate 2
6. Mid Hall 2	14. Reverse Gate
7. Large Hall 1	15. Delay 1
8. Large Hall 2	16. Delay 2

- The RV-1000 is AC powered, allowing it to easily handle the wide dynamic range of today's digital instruments.
- 16-bit linear A/D and D/A conversion ensures clean, high-quality digital processing with residual noise of less than -90dBm.
- A sophisticated reverb circuit with a newly developed algorithm, a technological advancement borrowed from the acclaimed R-880 is incorporated, and carefully designed reverb parameters furnish enhanced sound quality.
- A two-band EQ allows signals to be equalized before being sent to the effect circuit, giving you increased tonal control over reverb textures.

- Two inputs are provided, along with a stereo output. A gain switch for each input allows the RV-1000 to be used with a variety of input sources from guitar or keyboards to line level inputs for professional applications.
- Individual controls for Direct and Effect output level let you adjust these levels separately.
- A Built-in bypass switch enables instant "A-B" comparison of effected and "dry" sounds.
- Decay/Gate time can be altered manually, allowing you to create a variety of reverb effects.

Specifications

- Input Level/Impedance: -20dBm/1M Ω , +4dBm/40k Ω • Output Level/Impedance: -20dBm/1.5k Ω , +4dBm/5.7k Ω • Output Load Impedance: More than 10k Ω • Sampling System: 16-bit Linear A/D/A Conversion
- Residual Noise: Less than -90dBm (HF-A, level set at -20dBm)
- Bypass Switch: On/Off • Unigain Switch: +4dBm/-20dBm • Input Jacks: 2 (Almono, B) • Output Jacks: 2 (Almono, B) • Controls: Input Level, Direct Output Level, Effect Output Level, Pre EQ (Low/High), Decay/Gate Time • Mode Switch: 16 Modes (Room, Hall, Plate, etc.)
- Indicators: Bypass, Overload, Power • Dimensions: 483(W) x 208(D) x 44(H)mm (19" x 8 1/8" x 1 3/4") • Weight: 2.5kg (5 lb 8 oz)

*Specifications and appearance subject to change without notice.



RE-1000

Digital Multi-Echo

\$349.50



The RE-1000 is a 1U rack-mount digital delay/reverb unit with an impressive 16-bit dynamic range and sound quality equaling that of more advanced units. Featuring simultaneous delay/reverb capability and 16 preset combinations, the RE-1000 is the perfect unit for vocalists who want to enhance their sound, and is ideal for use with onstage keyboard or guitar setups, home recording studios, or PA systems.

- Two input jacks are provided, each with an independent attenuator to accommodate a wide range of input levels from microphone and instrument level to line level for professional applications. The attenuator knobs can be used to mix the levels of the two inputs.
- The RE-1000's high S/N ratio and wide dynamic range are the result of 16-bit linear A/D/A conversion.
- Advanced circuitry helps eliminate distortion from input signal overload. An overload indicator is provided for each channel and a special limiter circuit in the input amplifier section prevents excess signal levels.
- Two-band Pre-EQ enables signals to be equalized before effects processing, giving you increased control over effects textures.
- Sixteen presets are provided on the RE-1000, offering a variety of useful combinations of reverb and delay effects. Oversized mode switches allow quick and convenient selection of preset effects.

RE-1000 Presets

1. Echo 1	9. Echo & Rev 1
2. Echo 2	10. Echo & Rev 2
3. Echo 3	11. Echo & Rev 3
4. Echo 4	12. Echo & Rev 4
5. Multi Echo 1	13. Reverb 1
6. Multi Echo 2	14. Reverb 2
7. Multi Echo 3	15. Reverb 3
8. Multi Echo 4	16. Special

- An output balance control is provided for mixing the desired ratio between direct and effected signals. When set at maximum, only the effected signal will be output to the connected unit such as a mixer.
- Decay time can be adjusted manually to create subtle variations in reverb and delay effects.
- A Warmth control makes it possible to create analog-like sound effects. This feature expands the versatility of the RE-1000 by offering a choice of ultraclean digital textures and warm, analog-type effects.
- The RE-1000 is AC powered to easily handle the wide dynamic range of today's digital instruments.

Specifications

- **Input Level/Impedance:** Variable +4dBm/150kΩ — -52dBm/2kΩ (nominal), +19dBm (max.)
- **Output Level/Impedance:** -20dBm/1.5kΩ
- **Output Load Impedance:** More than 10kΩ
- **Sampling System:** 16-bit Linear A/D/A Conversion
- **Residual Noise:** Less than -90dBm (1HF-A)
- **Input Jacks:** 1, 2 • **Output Jacks:** 2 (A/mono, B)
- **Controls:** Input Gain (Input 1/2), Output Balance, Pre EQ (Low/high), Decay, Warmth
- **Indicators:** Power, Overload x 2
- **Mode Switch:** 16 Modes (Reverb, Delay, etc.)
- **Dimensions:** 482(W) x 208(D) x 44(H)mm (19" x 8 1/8" x 1 3/4")
- **Weight:** 2.5kg (5 lb 8 oz)

*Specifications and appearance subject to change without notice



OS-2

Overdrive/Distortion



The OS-2 is a versatile new compact effect pedal that provides guitarists with an exceptional variety of overdrive and distortion effects perfect for today's diverse styles. By combining overdrive and distortion effects in a single unit, the OS-2 allows you to blend these two effects as desired to produce a surprisingly wide range of distortion textures.

BOSS's "Asymmetric overdrive circuit," which first gained fame through its popular OD Series effects, is employed in the OS-2's overdrive section to realistically simulate the warm, responsive distortion characteristics of a vintage tube amp. The distortion section features a newly developed circuit that provides the powerful sustaining sounds favored by guitarists today.

The OS-2's Color control can be used to create a wide variety of tones ranging from full-bodied, mellow tube-overdrive sounds to sharp, crunchy distortion or any desired balance between the two extremes. Drive and Level controls are provided as well as a Tone control which lets you adjust the overall tonal balance of the output signal.

Specifications

• Controls: Color, Drive, Tone, Level • Switches: Effect On/Off • Indicators: Effect On/Off (Battery check) • Jacks: Input, Output, AC Adaptor • Input: Rated Input Level: -20dBm • Input Impedance: 1M Ω • Output: Output Load Impedance: more than 10k Ω • Power: DC 9V, 6F22/AC Adaptor (Optional PSA Series) • Current Draw: 10mA • Dimensions: 70(W) x 55(H) x 125(D)mm (2 3/4" x 2 1/8" x 4 1/4") • Weight: 400g (14 oz)

*Specifications and appearance subject to change without notice.

The EH-2 is a new compact effect pedal that restores the brilliance, dynamics and presence of sounds that have lost their clarity and delicate harmonic structures during signal processing.

The EH-2's circuitry contains a high-quality VCA that is applied to the incoming sound envelope to provide positive and negative phase mixing. Sounds processed through the EH-2 are cleaner, clearer and significantly more realistic. Used with guitar, the EH-2 enhances the picked tone's frequency according to picking strength, creating a superb sounding effect that cannot be produced by equalization, and works equally well with electric and electro-acoustic guitars. Effect level (sensitivity) and on/off status is displayed by LED indicators.

Specifications

• Controls: Sens, Frequency, Mix • Switches: Effect On/Off • Indicators: Effect On/Off (Battery Check), Sens • Jacks: Input, Output, AC Adaptor • Input: Rated Input Level: -20dBm • Input Impedance: 1M Ω • Output: Output Load Impedance: more than 10k Ω • Power: DC 9V, 6F22/AC Adaptor (Optional PSA Series) • Current Draw: 22mA • Dimensions: 70(W) x 55(H) x 125(D)mm (2 3/4" x 2 1/8" x 4 1/4") • Weight: 400g (14 oz)

*Specifications and appearance subject to change without notice.

EH-2

Enhancer



PN-2

Swing Pan



The BOSS PN-2 is a compact effects unit featuring an auto-panning function that continuously shifts sounds from left to right and vice versa in the soundfield. A tremolo effect is also provided that creates an effect similar to those found on classic guitar amplifiers.

The PN-2 is equipped with stereo inputs allowing it to be used with instruments such as keyboards and synthesizers which provide stereo outputs. The unit's panning effect even lets you obtain stereo sound from your instruments that have a monaural output.

Triangular or square wave modulation can be applied to the PN-2's panning and tremolo modes to provide a total of four available effect modes. When the tremolo effect is used in conjunction with the triangular wave modulation mode, a natural tremolo effect results, perfect for duplicating classic rockabilly or surf music. Using the panning effect with a square modulation mode produces a distinctive effect that is ideal for electric piano or vibraphone sounds. A rate indicator LED displays LFO modulation rate.

Specifications

- Controls: Depth, Rate • Switches: Mode (Pan 1/2, Tremolo 1/2), Effect On/Off • Indicators: Effect On/Off (Battery check), LFO • Jacks: Input A (Mono)/B, Output A (Mono)/B, AC Adaptor • Input: Rated Input Level A/B: -20dBm • Input Impedance A/B: 1M Ω • Output: Output Load Impedance A/B: more than 10k Ω • LFO Rate: 130ms to 14s • Power: DC 9V, 6F22/AC Adaptor (Optional PSA Series) • Current Draw: 20mA • Dimensions: 70(W) x 55(H) x 125(D)mm (2 1/4" x 2 1/8" x 4 13/16")
- Weight: 400g (14 oz)

*Specifications and appearance subject to change without notice.

The LM-2B, a new version of the popular and acclaimed LM-2 limiter, is designed exclusively for bass guitar. Featuring newly developed circuitry and an enhancer function designed specifically for bass guitar sounds, the LM-2B is perfect for performance or recording.

A high-performance VCA minimizes signal degradation caused by noise. The LM-2B also contains a high-performance envelope detection circuit that provides a natural sounding effect at all times.

Because the limiter function is designed to affect only peak level signals, the LM-2B preserves every tonal nuance of the original sound by eliminating transients that cause overload and provides rich, full-bodied guitar sounds ideal for popping and slapping playing styles.

The unit's enhancer function restores and improves the bass guitar's harmonics, ensuring that all the brilliance, cleanness and presence of the original sounds are retained. Because the LM-2B is designed especially for the deep, resonant sounds of a bass guitar, it optimizes the sound quality over the lower end of the frequency range.

Specifications

- Controls: Threshold, Enhance, Level • Switches: Effect On/Off • Indicators: Effect On/Off (Battery check) • Jacks: Input, Output, AC Adaptor • Input: Input Impedance: 1M Ω • Output: Output Load Impedance: more than 10k Ω • Power: DC 9V, 6F22/AC Adaptor (Optional PSA Series) • Current Draw: 16mA • Dimensions: 70(W) x 55(H) x 125(D)mm (2 1/4" x 2 1/8" x 4 13/16") • Weight: 400g (14 oz)

*Specifications and appearance subject to change without notice.

LM-2B

Bass Limiter



 **Roland**

Roland Corp US

7200 Dominion Circle
Los Angeles, CA. 90040-3647
U.S.A.
Phone (213) 685-5141